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ABSTRACT

This annotated bibliography included summaries of 14 articles and one report dealing with the topic of school and college food service programs. A brief introduction discusses the current trend toward more diversified use of food service facilities and describes recent innovations in the preparation and distribution of students' meals. Many of the publications cited examine possibilities for increasing the economic efficiency of food service programs by preparing meals in advance at a centralized food preparation center. Annotations range from approximately 125 to 250 words. (JG)

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FOOD SERVICE FACILITIES

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EdAd 576 School Buildings
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FOOD SERVICES FACILITIES

Planning, constructing and implementing a food service facility has become a very large and complex task. A food service facility has taken on new dimensions that have caused the old cafeteria concept to become obsolete. With new innovations in scheduling which is permitting more students to be free during the day the food center is getting more use than ever before. In many cases the facility has become the center of campus life. Mid-morning breaks, lunch times, and after school socialization are dominating the centers.

The facilities have overlapped into community use. Booster clubs are using the center for school related banquets. Clubs and school organizations are using the facilities for meetings and social get togethers. With this internal and external use we can see how the center is a significant part of the campus.

The major issues to be identified are cost, efficiency, quality , variety and attractiveness. Cost is directly related to both efficiency and attractiveness. If the food service center can provide food efficiency and do so in an attractive surrounding, cost becomes less important. Food centers are making money. The way they make money is by attracting students to the area. This is accomplished by providing attractive seating areas for small groups of people and getting rid of the armed forces concept.

Students do not have an over abundance of time so efficiency is very important. Long lines cause problems. Organization of your facility is needed to serve students in a quick and efficient manner. Most schools are going to a central food preparation center and then distributing the meals to various schools within the district. This method seems to cut down on time needed to feed students. All prepared foods are served on and with disposable utensils which eliminates alot of custodial work. Prepared foods also provide for a variety of menus and still satisfying the basic class "A" requirements.

The trend is to expand services to meet current and future needs. Food service expansion to include breakfast, dinner and snack facilities to meet student's needs both psychologically and nutritionally. To improve management particularly through centralization of all administrative functions. To improve selection and training of personnel.

These trends should help to influence daily participation by those students who use food services on occasion, but do not use it regularly. At present here are a tremendous amount of high school and college students who eat in commercial outlets rather than in facilities offered by schools.

The most important food service needed as reported by food service directors is for an increase in nutritional education programs. Good nutrition should be an educational experience

and should be provided the same as books, materials and bus service. Nutrition education should be at all levels, and teachers should be requested to have at least one basic nutrition course.

The success or failure of any food service is dependant on the philosophy of the district. If the philosophy is well researched and community supported your program has a good chance to meet the needs of your students.

The comparison of the various methods of feeding students is designed to allow you to make your own choice. That choice is dependant upon your resources. Your facilities will have to substantiate your decision. The centralized method is designed for school systems with more than one school. The vending machine method is usable if you have technicians available to service the machine and personnel trained to prepare the food.

The key to success in any lunch program is to individualize not militarize your food service facilities.

Food Served with Efficiency and Economy, School Management, (October, 1971), Vol. 15, Pgs 26-29

Income from food sales should be sufficient to cover direct costs related to labor, food and supplies, with the district covering all costs related to utilities, employee fringe benefits, custodial services, maintenance and capital outlay. The concept of Powland Unified School District includes a centralized food preparation center for every two intermediate school units and about ten elementary schools. It provides for a centralized operation that is of sufficient size to take advantage of many economics. The food center building has no internal supports in order to permit greater layout flexibility. Exterior is of frame and stucco with one wall that may be removed for later expansion. Floor level is elevated to permit fast and efficient loading and unloading of food and supplies all fabricated equipment is of stainless steel and sanitary construction. Timers and automatic controls were placed on equipment wherever cost permitted and the expenditure was justifiable. Food transported to the schools in electrically heated food carts. Individual distribution is done at various schools. A tight control is kept on labor costs by assigning and scheduling employees who are well trained. Perpetual inventory control systems have been established in a visible file cabinet for all food and supplies.

Cronan, Marion, "Emergency Expansion of Food Service Facilities", School Management, Vol. 15, Pg 44, (September, 1971)

During the peak month of the 1969-70 school year, 5.1 million children received free or reduced-price school lunches. In April 1971, this figure had risen to a total of 7.4 million. School administrators are going to be called on to make decisions based on the particular requirements of their situations. There are several systems to choose from in expanding your food service. If you want a stop-gap service where children are fed in temporary buildings then it wouldn't be advisable to purchase sophisticated systems. If you want a permanent solution then purchase the most efficient equipment. Methods of packaging food for delivery to schools have to be acceptable. No matter how efficient the system if pupils will not eat the meal served, the program is defeated. Food is prepared in a central kitchen, placed into containers while hot, sealed, and packed in insulated carrying boxes. No equipment is needed at the receiving school. All containers are disposed of after lunch. Another popular system uses two packs, one an aluminum container for hot foods, a plastic container for cold foods. Plastic eating utensils, straw, and a napkin are available in one cellophane pack and may be included in the cold pack. At the receiving school, the child picks up his hot pack, cold pack, milk and eats at his desk.

Length of time for deliver is important. If it is short insulated containers may be used. If it is longer you might have to deliver at night to avoid traffic, then there is need for additional equipment at the receiving school. A freezer or a refrigerator, and oven will be needed for holding and heating the aluminum packaged component of the meal.

Carroll, Thomas, "Frozen Lunches Solve Hot Problem", School Management, Vol. 16, Pgs 13-15, (February, 1972)

Bridgeport, Conn. chose to develop a system based on the airline industry. If 120 passengers could be fed from a tiny galley in back of a plane, school children could get the same benefit. Each meal is made up of a hot pack with a vegetable, an entree and a cold pack with dessert, bread, and butter. The cold packs also had a napkin, straw and an eating utensil. Once a month the city receives frozen meals and storesthem in a public freezer warehouse. Each day a city truck picks up the estimated number of meals needed for the following day and delivers them to the schools.. The frozen entree packs go in a small walk-in freezer while the frozen dessert packs go into a refrigerator for thawing. An hour and a half before lunchtime, the entrees are taken from the freezer and stacked in wire baskets. The stack of baskets are moved directly to a high speed convection oven and in twenty five minutes the meals are hot. The child picks up his or her lunch and is ready to eat. The line moves twice as fast as conventional systems and there is no left over food, dishes, trays, or mess to be cleaned up. Everything is disposable. A freezer, refrigerator and a convection oven are the only pieces of equipment needed in each school. Both spoilage and waste have practically been eliminated. All new meals are given the "taste test". If the children like the food they will eat it, if not they won't eat it.

A Nothing Lunch Program Becomes Really Something-at decent cost, The American School Board Journal, (January, 1973), Vol. 160, Pgs 43-45

Bridgeton, New Jersey, school board figured they would be short of funds for basic operation of a hot lunch program, which meant they had to solve their dilemma without constructing a new commissary building or spending vast sums on equipment. The answer was a satellite system that involves preparation of lunches in a central location and their distribution to the schools. The relative simplicity of Bridgeton's satellite system is shown by the following: Food Preparation: Everything is done in central kitchen one day in advance. Packaging: Hot and cold portions are assembled on semi-automatic production lines in central kitchen. Over night refrigeration: Hot and cold portions are packed into baskets each accommodating ten hot or cold packs. Baskets are stacked on wheeled dollies, each containing fifty baskets or five hundred packs. Loaded dollies are rolled into walk-in refrigerator for overnight storage. Distribution: Refrigerated lunches are trucked to various schools. Heatups: Hot packs are warmed in convection ovens located at each school. Serving: Children move through lines at rate of 25 per minute, picking up hot and cold packs plus milk. Cleanup: All containers and utensils go directly into the garbage.

Dukiet, Kenneth, "School Food Service Index, 1972-73", School Management, Vol. 17, Pgs 17-22, (February, 1973)

The school food service market represents a huge outlet for many food companies and is growing rapidly. There are many new trends in the food service area. Trends can be summarized as follows:

Expanding services to meet current and future needs.

Food service expansion to include breakfast, dinner and snack facilities.

More in-service training in the schools themselves for career training in nutrition and quantity food service.

Food service to feed senior citizens and possibly other groups such as night school student.

Improved management particularly through centralization of all administrative functions.

Use of data processing to speed reporting.

Improved selection and training of personnel.

More efficient kitchen layouts and arrangements to improve serving of food.

More flexible menus.

Increased use of convenience foods and disposable utensils.

The most important food service needed as reported by food service directors is for an increase in nutritional education programs. The four basic needs are money, free lunches, improved facilities, and more breakfasts.

Korney, Herbert A, "A Case for Food Service Companies", School Management. Vol. 17, Pgs 28-29, (February, 1973)

Two major changes in the National School Lunch Program have opened the door for local school districts to expand their food services operations. First one resulted in the Non-Food Assistance Program (NFAP) and the second provided the opportunity to enlist the aid of food management companies. The Long Branch, New Jersey, school district set up the satellite system where all food is prepared fresh daily in the junior high school and shipped in refrigerated trucks to other school locations. The meals are not frozen. Individual meals are packaged from the daily lunch fare. They utilize the hot or cold pack program with disposable trays and utensils. The all purpose rooms in the schools are equipped with folding tables, and convert to lunch rooms at noon time. The prime reason for utilizing the satellite system was to minimize capital outlay requirements necessary to provide feeding facilities in the existing schools. Centralization of the preparation of the food saves on time, money, and gives a higher rate of production. They obtained higher particiapation in the lower grades and more versatility. With a minimum of capital outlay they developed a completely operable food service system which is versatile and self-sustaining.

Willett, Roslyn, "Food Service Problems and Possibilities", College Management, Vol. 8, Pgs 16-17, (February, 1973)

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There are three areas in which campus feeding is undergoing change. First, there has been a revolution in the preparation of food on and off campus. Time has been lengthened between preparation and actual service of food. There is an increasing possibilities of microbiological contamination. Second, there has been a change in student attitudes toward the food they eat. Students are more nutrition-conscious. Third, the setting for campus eating has changed. Students want variety in their eating. Food service managers are turning to prepared foods. Prepared foods offer a wider choice with less preparation. New systems rely on central campus kitchens. Setting up new systems has its hazards. Processed foods contain additives designed to prolong shelf life and prevent microbiological problems. It also changes the microbe mix: Food may taste and smell as it should and yet be contaminated. Prepared food in the central kitchen and then transferred for heating in a satellite unit is subject to microbial growth. Training is essential for people that prepare food. Surroundings have a big influence on food. More and more colleges are offering a choice of eating places. Eating areas are taking into consideration lighting, color, atmosphere and coziness.

Dukiet, Kenneth, "Higher Education's Food Service Operations", College Management, Vol. 8, Pgs 22-24, (February, 1973)

This report is intended to aid school administrators in planning and evaluating their food service facilities. The food service operation in higher education is only 36.7% of the food service operation of elementary and secondary schools. The food services of colleges and universities will generate a net surplus for 1972-73 of $54 million. The price per meal for students is about $2.91 per day. The report shows that 3/4 of colleges and universities had on site central kitchens, while a much smaller number had satellite kitchens. Over 50% have vending machines but only 19% use outside food service contractors. The biggest need reported by college and university food service directors stated they needed more space in the dining, kitchen or storage areas. Another need is kitchen equipment. The food service operations in higher education are growing rapidly. In 1972-73 they will account for an intake of $945 million which is up by $210 million over the 1970-71 figure of $735 million. Not every college or university made money but the majority did.

University of Delaware's Menu: Cooked on Campus, College Management, (February, 1972), Vol. 2, Pgs 7-9.

All food is cooked in the individual dining halls, from menus and preparation charts designed by the dietitian's office. Gilbert P. Volmi, director of housing has no objection to convenience foods but sees no reason to adopt them. He explains his in-service training and management development program. Students sit on committees to govern the food service. They act as tasters and also have a large voice in the selection of the types and varieties of foods used. They offer a variety of dining experiences. Special functions may revolve around holidays. They have a policy allowing students to eat as much as they wish. No disposables are used at the University of Delaware. The cost is to high and it lessens the atmosphere. The success of his program is a mixture of food, personnel training, special events, and solid business procedures put into the pot aimed at student satisfaction and a break even budget.

McCue, Tom, "Out Of The Past And The Red, Into The Now And The Black", College Management, Vol. 8, Pgs 20-21, (February, 1973)

One of the serious drawbacks on food service facilities is if they look bleak, barren and institutional. It discourages students from eating there. One of the first and foremost requirements is to remodel the old bleak dining hall. An attractive menu is needed along with a variety of selections. The operation has to be made efficient. This article states that introduction of soft serve "ice cream" and machine made milkshakes has increased both food sales and efficiency. Snack bars are made available for student use during the school day. Cafeteria lines are set up so all foods, except those from the steam table and special orders, can be picked up by the students. Divide large dining areas into small attractive areas for students. Tables and chairs are plastic and colorful. To facilitate the handling of foods, place the cooking and preparation equipment immediately behind the related dispensing equipment. In this way the food only needs to be handled once.

The Economics of Alternative School Feeding Systems, State Univ. of New York, Ithaca., (May 1973)

This study is based on data for the 1970-71 school year. It develops a uniform method for comparing costs of alternative school feeding systems. The study attempts to determine relative costs of providing meals under alternative production and distribution systems. It also establishes standards relating to food costs and labor efficiency that could be used in appraising the relative performances of a school's food program and provide managers cost estimations for remodeling existing facilities. The average costs of providing meals under school owned and operated alternative production and distribution systems are determined. Findings indicate that the average cost of a meal produced in a self contained kitchen is 62.9 cents in the north and 48.7 cents in the south. Northern satellite systems provide a meal for 53 cents but the average is 56.9 cents in the south. Labor costs are the biggest source of variation in the preparation of school lunches. The article says that contract management and commercially supplied systems are competitive alternatives to school managed and operated systems.

Found-A Faster, Better, Cheaper Way To Feed Students, School Management, (September, 1967), Vol. 11, pt 3, Pgs 98-100

This article describes a method of feeding 20 students a minute, while cutting labor bill by 40% and eliminininating most of the noise, and sloppiness of cafeteria clean up. The system used is frozen foods purchased once a week, in bulk form. Menu is derived from a master menu created at the central office and distributed to all schools. Food is stored in walk-in freezers large enough to accomodate about 95% of the food used in any given week. Other menu items (milk, salad greens, butter) are delivered as needed. Food is placed in pans then inracks that are wheeled into ovens. Ovens are high speed, convection design. Food requires 20-22 minutes from frozen to ready to serve form. Food is placed in food holding cabinets. Serving starts 25 minutes after food is put in ovens. Trays are stacked during the time food is warming and eating utensils, milk, and cold food is made ready to serve. Conveyor belt is used and workers station themselves behind belt and place food on the tray as it passes their station. When students finish eating they dump everything on their trays into trash cans and stack the trays separately for disposal. After students leave the personnel washes the few serving utensils and cleans up the eating area.

Flambert, Richard, "What You Have to Know to Design A Cafeteria", School Management, Vol. 11, pt 3, Pgs 65-67, (December, 1967)

This article makes a careful attempt to identify the influences and project their probable effect on the program. Census and participation: Is the school built and equipped for the ultimate design or will the building be temporary? How many students and faculty will use the food service facility and to what extent? The Menu: Will meals be class "A" without choices or class "A" with choices? Combination of la carte and class "A" and if so what percentage of each? Purchasing procedures: What will the delivery schedule be? What percentage of food will be frozen? To what extent will "convenience foods" be utilized? Degree of centralization: Will the central plant be a part of the new school? Will the central plant be in a separate location? If the central plant is already in existence, has it the capacity to produce an additional load? Lunch period: Single, multiple, or staggered? Length of period? How large will the lunch group be? Methods of service: Tray assembley using conveyorized system? What items will student assemble? Would multiple, inline counters- or a scramble system-prove more expedient? Will there be facilities for brown baggers? Can we use vending machines? Money handling: Will meal tickets be used? Who sells tickets? If no tickets, will cashiers be students or faculty? Do we use cash registers or money drawers. Type of service ware: Disposable or non-disposable? What shape and sizes of service ware? If a disaposable service is to be used, what will be the method of disposing of the disposables.

How To Put A Lunch Program In The Black, School Management, (February, 1967), Vol. 11 pt 1, Pgs 100-105

This article gives you facts on how to build a good food services program from an existing bad one. The James Lick High School, San Jose, Calif. had several alternatives. Either abolish the cafeteria entirely or make drastic improvements. They did both. They abolished the cafeteria and replaced it with a row of vending machines. Result , 89% of student body used the facility compared to 45% for the cafeteria. Gross dollar increase of $5000 per month. Why vending? It would mean substantial savings and would revive flagging student interest. Students like system because it means a speeded-up service, and a greater variety of menu. School district signed contract with Automatic Retailers of America (ARA) which provided a trained technician for full time duty to see machines operated correctly, trained district personnel to package food for machines and supplied prepackaged supplemental items for the machines. ARA returns a certain percentage of the money made from machine to the district. District kept the money made frm sale of food they prepared. This service is offered for students at a "mid-morning" break. The school district has notified architects not to include cafeterias in their plans but to submit a vending station facility in the plans.

Flambert, Richard, "How Well Is Your Feeding Operation Organized"? School Management, Vol. 12, pt 1, (June, 1968)

This article states that a well run food facility is dependent upon precise meshing, mating, and balancing of its component parts to make it operate efficiently. A quick review of the fundamentals. The major functions are: 1. Receiving,,2. Storage, 3. Production, 4. Serving, 5. Housekeeping, 6. Accounting/Procuring The sequence of functions listed with the exception of accounting/ procuring is "linear" each flows into the next. Receiving: Here is where you get your monies worth. Deliveries should be inspected for weight, quality, count and conformance. Storage: Supplies logically proceed from receiving into proper storage facilities-dry, refrigerated or frozen. It is important that the refrigerated storage area be readily accessible to the area of production. Production: Comprised of pre-preparation, processing, cooking and baking, and portioning. Whether large or small the flow of product through this area must be absolutely sequential if efficiency is to be realized. Serving: A pre-assembled tray may be used. A choice system or assorted la carte may be utilized. Housekeeping: Deals with sanitation. Use of disposables or not. If dishes are returned to the dish room, the dish room should have equal access to both dining room and serving area. Accounting/ Procuring: This office doesn't effect the product so may be placed anywhere. You should have ample storage for records. Every aspect of this program must be aimed at expediting the operation.

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TITLES:

1. A Nothing Lunch Program Becomes Really Something-at decent cost, The American School Board Journal, (January, 1973), Vol. 160, Pgs 43-45

2. Food Served With Efficiency And Economy, School Management, (October, 1971), Vol. 15, Pgs 26-29

3. Found-A Faster, Better, Cheaper Way To Feed Students, School Management, (September, 1967), Vol. 11, pt 3, Pgs 98-100

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